

MOOSEHORN NATIONAL WILDLIFE REFUGE

NARRATIVE REPORT - 1972

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MOOSEHORN NATIONAL WILDLIFE REFUGE
WASHINGTON COUNTY
CALAIS, MAINE

1972 NARRATIVE REPORT



PERMANENT PERSONNEL (L to R)

Robert V. Wade	Refuge Manager
Joseph E. Ware, Jr.	Asst. Refuge Manager
Helen E. Forsyth	Refuge Clerk
Arnold W. Nidecker III	Asst. Refuge Manager
Stanley E. McConvey	Biological Technician
Merton L. Hatton	Maintenance Worker
Alton L. Sawyer	Maintenance Worker

(SUB-UNIT: CARLTON POND WATERFOWL PRODUCTION AREA - Reported Separately)

I - GENERAL

A. Weather Conditions

Following is a summary of weather data recorded at Refuge Headquarters during the year.

	Snowfall		Precipitation		Temperature			
	1972	Normal*	1972	Normal*	Max.	Min.	1972	Normal*
Jan.	18.5	20.1	2.91	4.01	47	-26	17	16
Feb.	30.5	22.5	3.49	3.95	46	-19	15	19
March	36.5	18.2	6.64	3.10	49	-14	22	29
April	26.0	6.0	2.55	3.40	58	-4	36	40
May	0	.6	3.23	3.58	90	20	53	52
June	0	0	5.85	3.14	86	30	61	62
July	0	0	2.25	2.97	91	45	69	68
Aug.	0	0	2.88	3.06	87	38	65	66
Sept.	0	0	5.58	4.17	87	30	58	57
Oct.	3.0	1.1	5.29	3.90	68	12	40	46
Nov.	11.0	4.8	6.02	5.30	48	4	32	35
Dec.	38.0	21.1	7.61	5.22	54	-3	17	21
	163.5	94.4	54.30	45.80	91	-26	60	43

*Based on the average of 19 years (1954-72) that weather data has been recorded at Refuge Headquarters.

The winter of 1971-72 was about normal. Although the recorded snowfall was 136.5 inches, accumulations were not sustained until February 22 when the area was laced by a Nor'easter.

The first snowfall on October 13 and the last on April 19 gave us only five snow free months, and there was still snow in the woods on June 2.

The late winter was followed by a seven-day spring and then summer broke through. A cool fall followed with heavy rains.

There were 103 frost free days between June 11 and September 23. This is 17 days shorter than the 120 day norm.

B. Habitat Conditions1. Water

A very wet March brought flooding on the Lower Magurreweock Marsh. Double-crested Cormorants congregated in the marsh during the sucker run.

Water levels were above optimum during most of the year. Most of the flowages were ice covered by early December.

2. Food and Cover

A late frost in mid-June destroyed a large portion of the fruit bearing crops. Blueberries, chokecherries, raspberries, and apples were all below average production levels.

Waterfowl food and cover was adequate. Seed production for spruce was excellent, while for other conifers it was below normal.

II - WILDLIFE

A. Migratory Birds1. Waterfowl

Black ducks showed a decline in numbers again this year, while ring-necked ducks remained about the same.

Waterfowl use declined again this year to 295,069 use days. Duck production was very low with only 615. There is a continuing decrease in the number of breeding pairs returning to the refuge. Renesting was common, but many nests were flooded two or three times. Several late broods were sighted.

Canada Geese, our bright spot, were severely hampered by late ice. Most nesting is done on small impoundments and these were still frozen over in late April. Only 25 young were produced.

Our wood duck nesting box use was about normal for the year. Of 56 boxes 31 were not used, four were used by wood ducks, four by tree swallows, 10 by starlings, one by a sparrow hawk, one by a short-billed marsh wren, and five could not be checked because of thin ice.

2. Other Waterbirds

Great blue herons, bitterns, loons, pied-billed grebes, and rails remain common, but not abundant. An adult great blue heron was caught in a muskrat trap during the spring trapping season in waters adjacent to the refuge. The bird was rescued and released on the refuge out of trap range.

3. Shorebirds

The first woodcock was observed on April 2. Heavy snow cover did not deter the birds from moving north. Nine woodcock were observed around the Visitor Center at one time.

The woodcock singing ground census routes were run late this year. The interior refuge roads were still snow covered and/or wet. Most of the routes were run after May 8, and three could not be driven by the May 15 deadline. Ninety-six males were counted on the 15 routes which were run--about normal.

Snipe, killdeer, sandpipers, and other shorebirds were present in their usual numbers. Snipe and killdeer were constantly around the Visitor Center, and visible to the public with their broods.

4. Doves

Only an occasional mourning dove was sighted during the year.

B. Upland Game

The ruffed grouse population took a sudden surge upwards this year. Production was good and fall sightings were frequent. With less emphasis on grouse banding, success dropped off. Only 67 ruffed grouse and 10 spruce grouse were banded.

C. Big Game

For the first time since 1953, Moosehorn was closed to deer hunting. This was in cooperation with the State of Maine. Several deer were in the public eye all summer and fall. Track counts indicate that the refuge deer herd is staging a slow comeback from the severe 1970-71 winter kill. The estimated population is 290 animals.

Black bear sightings were more frequent again this year. The bear population seems to be increasing.

About eight moose frequent the refuge, and they are becoming more common each year.

D. Fur Animals, Predators, Rodents, and Other Mammals

A total of 401 muskrat houses and bank dens were counted this fall. The majority of the houses were in Trapping Unit No. 1. This is a decided increase over last year's figure of 163 houses.

Beaver are a nuisance in several areas and a benefit to the refuge in others. There are seven nuisance colonies to be removed during the trapping season. Beaver debris removal was not a monumental task this year because of high water in most of the impoundments.

The otter population is low but stable. Several otter runs are well used and their slides are quite evident. The main areas of use are Two-Mile Meadow Brook, Mahar Brook, and Bearce Brook.

Mink are trapped annually by the commercial trapper. Weasel are live-trapped only when they interfere with the woodcock program. Fishers are rare, but one family was seen near Cranberry Lake.

Bobcat, red fox, snowshoe hare, porcupine, and other small mammals remain at a constant level.

E. Hawks, Eagles, Ospreys, Crows, and Ravens

The bald eagle populations are low. During the spring a pair of eagles were frequently seen eating muskrats. This pair nests near the Magalloway Marsh and were unsuccessful again for the sixth year.

The Howard Hill Flowage again provided a successful nesting site for a pair of ospreys.

Hawk and owl populations are decreasing. One red-tailed hawk was observed around headquarters in December.

F. Other Birds

The winter bird feeder at headquarters attracted the following birds: evening and pine grosbeaks, gray and blue jays, starlings, black-capped chickadees, red-winged blackbirds, red-breasted nuthatches, and slate-colored juncos.

The Audubon Christmas Bird Count was conducted on December 28. This is the seventh consecutive year for the count. A list is attached (see page 8).

G. Fish

Bass fishing pressure was higher than trout fishing. High water reduced the normally good quality fishing down to a basic struggle--man vs. mud. No trout stocking on the refuge for two years has reduced fishing pressure.

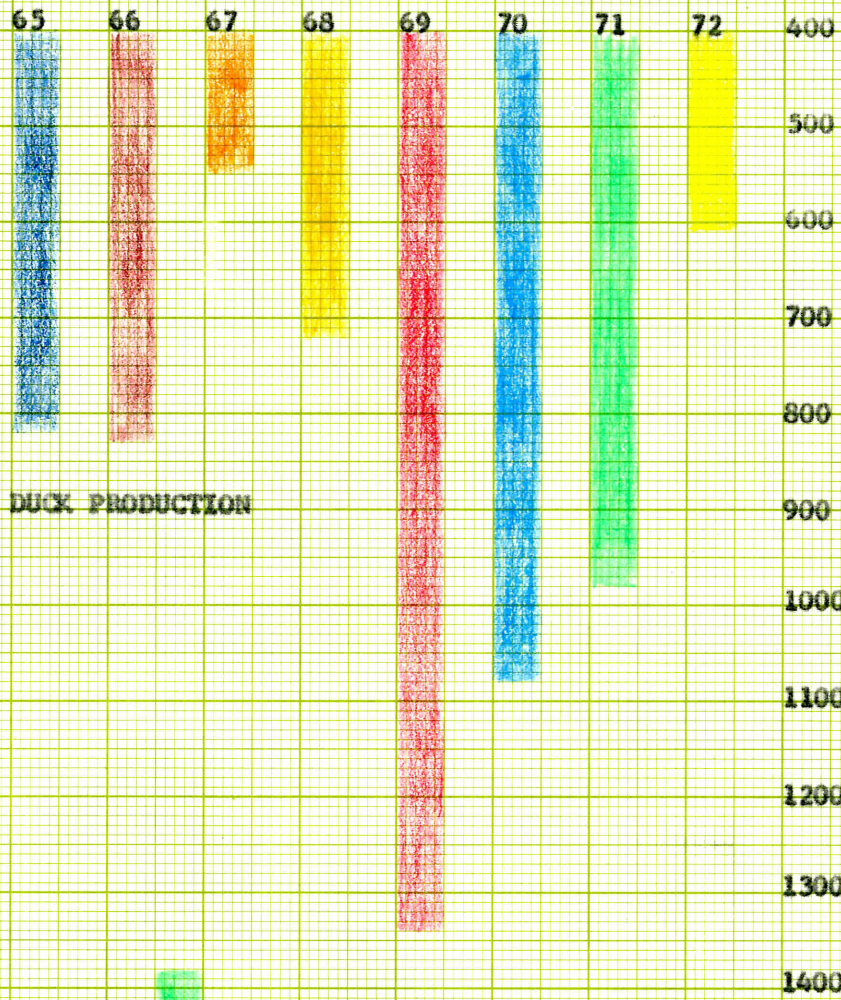
Craig Brook National Fish Hatchery provided three land-locked salmon for the Visitor Center aquarium. Children and adults alike enjoy seeing "the one that got away".

H. Reptiles and Amphibians

The usual number of snakes, frogs, toads, and salamanders were observed.

I. Disease

None to report.



90

80

70

60

50

40

30

20

10

0

GOOSE PRODUCTION

72

71

70

69

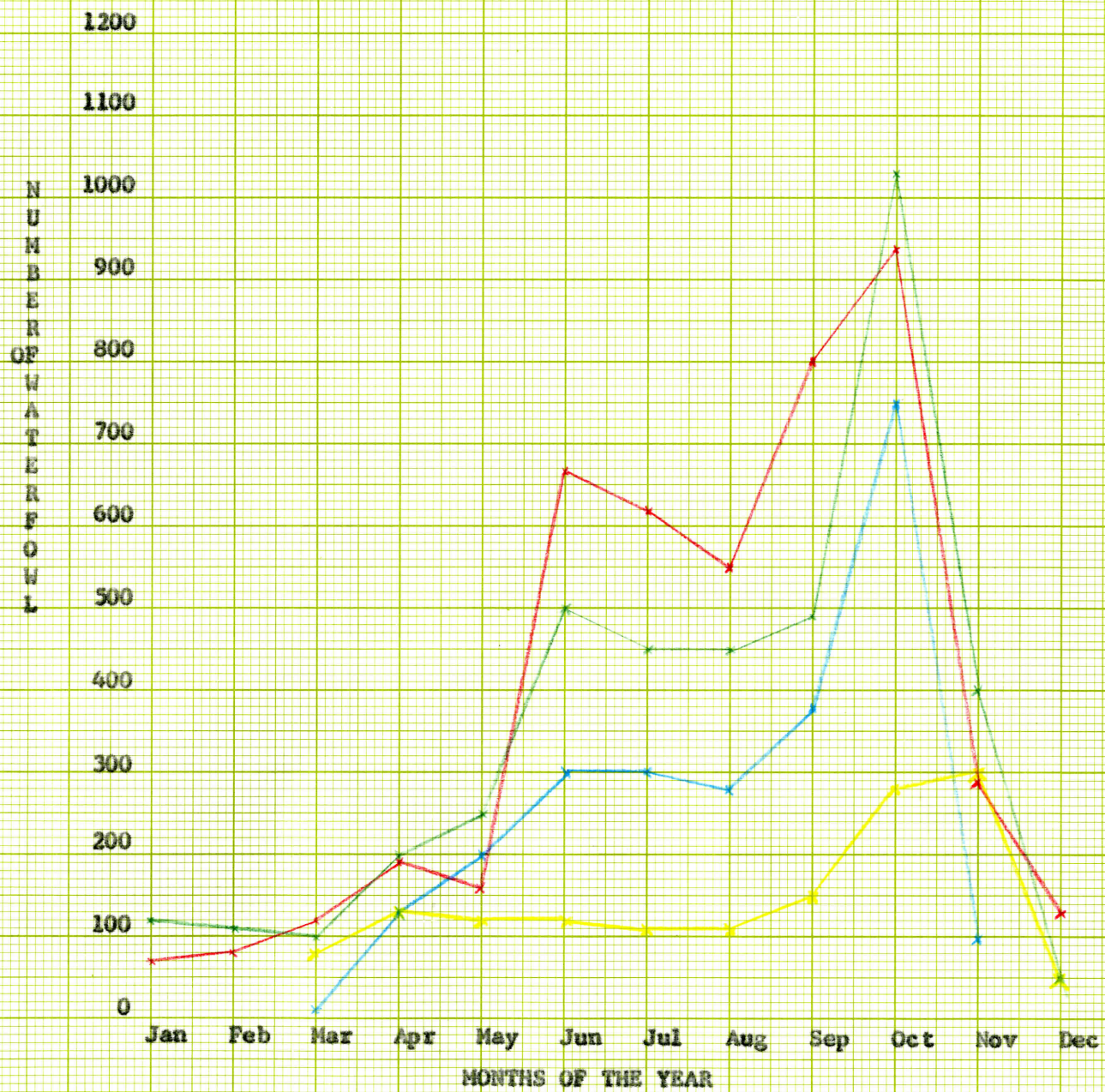
68

67

66

65

WATERFOWL USE BY PEAK NUMBERS



LEGEND

- Black Duck
- Canada Goose
- Ring-necked Duck
- All other ducks

CHRISTMAS BIRD COUNT - December 28, 1972

<u>Species</u>	<u>Number</u>
Common Loon	1
Horned Grebe	1
Great Cormorant	1
Black Duck	197
Common Goldeneye	75
Barrow's Goldeneye	12
Bufflehead	50
Surf Scoter	12
Red-breasted Merganser	11
Sharp-shinned Hawk	1
Red-tailed Hawk	1
Bald Eagle	3
Ruffed Grouse	5
Great Black-backed Gull	66
Herring Gull	433
Belted Kingfisher	1
Downy Woodpecker	1
Gray Jay	1
Blue Jay	69
Raven	20
Crow	118
Black-capped Chickadee	79
White-breasted Nuthatch	1
Red-breasted Nuthatch	19
Brown Creeper	1
Northern Shrike	1
Starling	10
House Sparrow	20
Evening Grosbeak	44
Pine Grosbeak	85
Goldfinch	8
Slate-colored Junco	41
Tree Sparrow	31
White-throated Sparrow	2
Song Sparrow	2
Total Species: 35	<u>1,432</u>

Participants: Arlo Bates
 Daryl Linton
 Kenneth MacWha
 Paul Oliver
 Nellie Ross
 Ed Sawyer
 Robert Shafte
 Joseph Ware
 Robert V. Wade (Compiler)

III - REFUGE DEVELOPMENT AND MAINTENANCE

A. Physical Development

Following is a listing of some of the accomplishments this year.

Brushed 16 miles of refuge boundary. Map attached (page 13).

Blowed snow from headquarters entrance road on 12 occasions.

Received large Bob Hines painting from the Central Office and placed in the auditorium at the Visitor Center.

Posted and removed signs relative to the opening and closing of the refuge snowmobile season.

All refuge roads were graded.

Repaired gutter drainage system at Visitor Center.

Cut and brushed boundary of Natural Area on the Edmunds Unit - four miles.

Serviced and completed safety checks on all refuge vehicles.

Checked and repaired fence on Barn Meadow and Stewart grazing units.

Serviced all refuge fire equipment.

Relocated and installed two culverts on the Auto Tour.

Checked and marked all hand tools for identification purposes.

Erected signs for Cranberry Lake Nature Trail and new Beaver Trail.

All refuge roadsides were mowed.

Air conditioning unit remodeled and improved at Visitor Center.

Repaired small washout on Beaver Trail.

Underground electric cable at headquarters repaired by local electrician.

Checked and serviced wood duck boxes.

The following projects were completed by the Youth Conservation Corps during the summer of 1972. These projects totaled approximately \$20,000 in value to the refuge.

1. Roadside brushing on our 10-mile Auto Tour.
2. Re-shingled refuge office and Refuge Manager's garage roofs.
3. Marked 14 two-foot chain strips for woodcock management.
4. Began posting of Edmunds Wilderness Area.
5. Painted the exterior of the office, shop, and Visitor Center.
6. Posted 12 refuge interior boundary corners.
7. Fenced and re-posted one mile of Barn Meadow grazing unit.
8. Brushed shorelines of control structures on Popple, Lower Goodell Heath, and Upper Hagurtecock.
9. Routine litter pickup on U.S. Rt. 1 and Charlotte Road.
10. Ran elevation levels on 10 refuge impoundments.
11. Assisted at Visitor Center.
12. Posted, fenced, and straightened grave markers on two old cemeteries on the Edmunds Unit.
13. Painted interior of shop and Visitor Center.
14. Re-stained and lettered 25 refuge signs.
15. Assisted in woodcock trapping and banding program.
16. Assisted in waterfowl banding and trapping program.
17. Biological Aid to refuge Biologist on several projects.
18. YCC camp improvement, maintenance, and operation.
19. Constructed 12 bluebird houses.
20. Cleaned up, leveled, and hauled one load of gravel at YCC well site.
21. Limed, seeded, and fertilized Hanson gravel pit.
22. Constructed a wood frame concrete floor floor woodcock storage building, size 20' X 32'.
23. Constructed fence and posted line from U.S. Rt. 1 to Maine Central Railroad track.

Soil and Moisture Program

Young's Pit (opposite South Trail) was sloped and leveled during the year. Liming, fertilizing, mulching, and seeding on this 2-acre gravel pit will be accomplished during the summer of 1973.

Additional liming, fertilizing, and seeding was accomplished on the Hanson Pit. This gravel pit was rehabilitated during the summer of 1971; however, it was necessary to plant the barren spots this year.

B. Planting

1. Aquatic and Marsh Plants

None this year.

2. Trees and Shrubs

None this year.

3. Upland Herbaceous Plants

None this year.

4. Cultivated Crops

There is no farming at this station.

C. Collections and Receipts

1. Seed and Other Propagules

None this year.

2. Specimens

A few song and game birds that were found dead on the refuge have been given to the University of Maine's Wildlife Department.

D. Control of Vegetation

No spraying with herbicides was done by the refuge.

Timber cutting in strips, especially for improvement of woodcock habitat, totaled approximately 25 acres. This clear cutting was accomplished by pulpwood permittees.

All roadsides were mowed to prevent the encroachment of brush on refuge roads.

E. Planned Burning

During April approximately 119 acres were control burned in an effort to maintain wildlife openings. This consisted primarily of old farm fields. With snow cover in the nearby forests this burning was accomplished with a minimum of labor. Costs varied from 39¢ to \$2.08 per acre.

F. Fires

On May 13 a small 3-acre wildfire occurred on the Maine Central Railroad right-of-way and refuge lands. A small shack and handcar belonging to the Maine Central Railroad were destroyed in this fire.

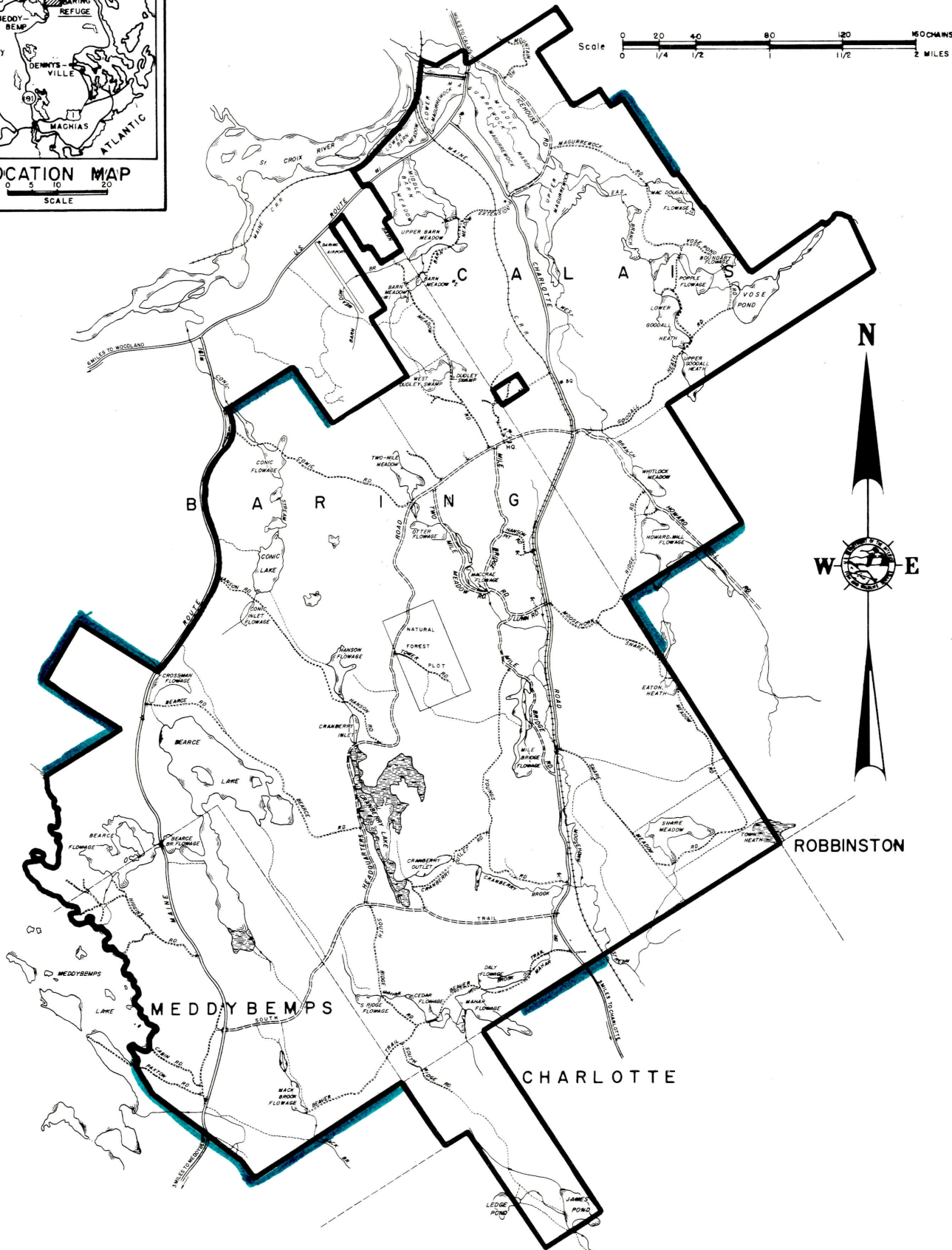
MOOSEHORN NATIONAL WILDLIFE REFUGE

BARING DIVISION

WASHINGTON COUNTY, MAINE



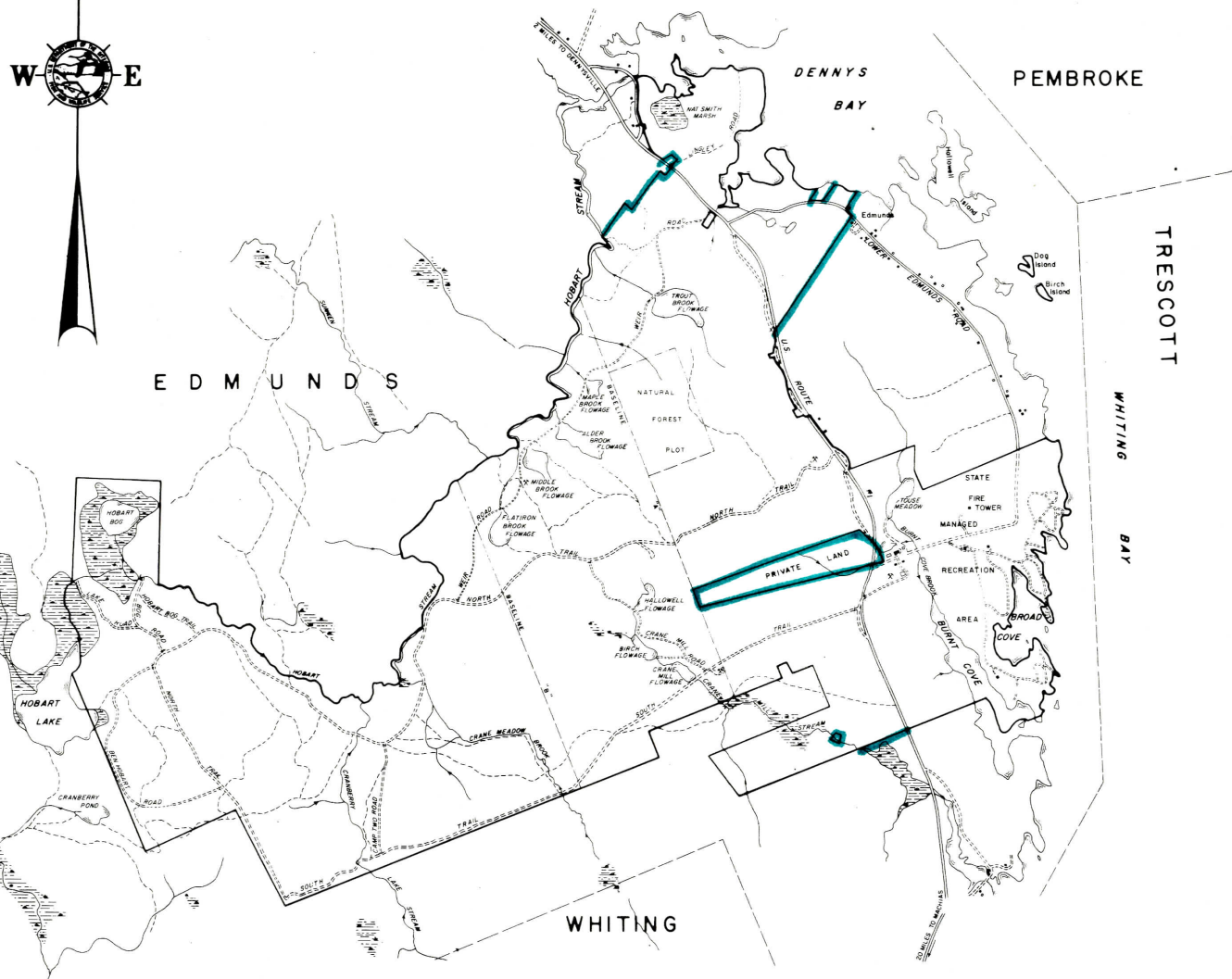
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MOOSEHORN NATIONAL WILDLIFE REFUGE

EDMUNDS DIVISION

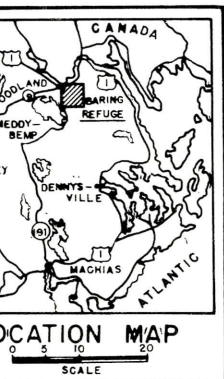
WASHINGTON COUNTY, MAINE



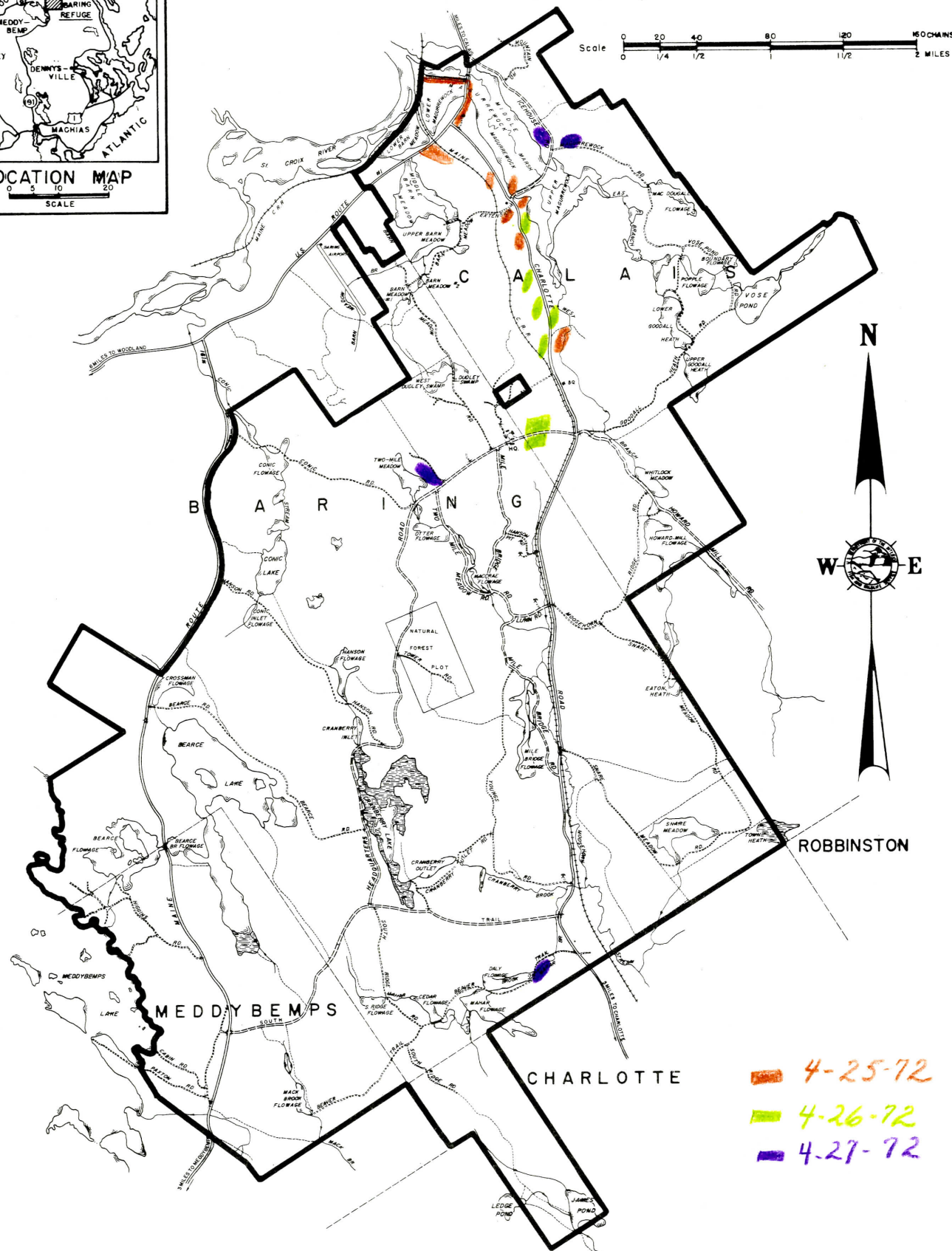
MOOSEHORN NATIONAL WILDLIFE REFUGE

BARING DIVISION

WASHINGTON COUNTY, MAINE



Scale 0 20 40 80 120 160 MILES
0 1/4 1/2 1 1 1/2 2 MILES



4-25-72
4-26-72
4-27-72

IV - RESOURCE MANAGEMENT

A. Grazing

For the first time in more than 10 years, available refuge pasture land was inadequate to meet the local requirements. Our three pastures, totaling 88 acres, were fully utilized and demands for the next several years look promising. A total of 144.5 AUM's was used for receipts of \$201.23.

B. Haying

Hay was harvested on 30 acres totaling 27 1/3 tons with receipts of \$82. Again this year, a permittee spread manure on 12 acres of land on the Edmunds Unit to improve this resource in future years.

C. Fur Harvest

In February a trapper on the Baring Unit harvested 14 beaver for receipts of \$300; the refuge share was 25%, or \$75. Most of these are what we term "nuisance beaver".

The Youth Trapping Program was conducted by Lloyd Clark, retired Warden Supervisor, and by refuge personnel. The goals were to teach local boys proper trapping techniques and practices, and to remove surplus muskrat, mink, and beaver from the refuge. Training sessions involving use of traps, life histories, and management of furbearers and Maine trapping laws were held prior to field work.

Fourteen boys from 12 through 14 years of age participated in beaver trapping. Receipts totaling \$358 for sale of 15 beaver and several muskrat were divided among the youths according to attendance. Eleven boys participated in fall mink and muskrat trapping. Sixty-one muskrats and three mink were sold for \$130. Receipts were divided as above.

D. Timber

Our pulpwood permittees are required to clear-cut in alternate two-chain strips for the benefit of woodcock habitat. In 1972 all the cutting occurred in the Crossman area. This included the cutting, but not removing, of pulpwood by the Washington County Vocational Technical School in Calais, which offers a course for young students in the techniques of wood harvesting.

There were four sales of fuelwood. About half of this fuelwood is used in fireplaces, but we still have two permittees who heat their homes by burning wood.

Three permits were issued for commercial cutting of Christmas trees. This use is slowly declining as more acreage is becoming available in the commercial Christmas tree plantations. The use of artificial

Christmas trees also has an influence on this market. Almost 1,000 local people took advantage of our offer to cut a free family Christmas tree. That is only about as many trees as one acre can produce.

E. Commercial Fishing

None

F. Other Uses

The only other revenue was the few dollars we charge summer college students for using a shack.

Income for the year was:	Timber	- \$747.10
	Fur	- 75.00
	Grazing	- 201.25
	Mowing	- 82.00
	Rentals (summer students)	- <u>24.00</u>
	TOTAL:	\$1,129.35

A check for \$3,218.30 was presented to Washington County as a refuge payment on December 1, 1972.

V - FIELD INVESTIGATIONS OR APPLIED RESEARCH

A. Woodcock Study

Woodcock captures were above normal this year. Four hundred and twenty (420) new birds were banded, while the average for five previous years was 322. Age ratios indicated high production even with an unseasonably cold and snowy spring. Hatch year birds accounted for 72.4% of the 1972 captures (repeats not included) as compared with an average 65.5% of summer captures between 1962 and 1971.

Our standard trapping, mist-netting, and night-lighting techniques were used to capture woodcock. Strips were mowed in fields again this year to aid night-lighting. They were especially useful for lighting from a 4-wheel-drive vehicle, but were also use as guide-lines by crews on foot. It is still not clear whether woodcock concentrate on strips or whether those landing on strips are easier to see and capture.

Lighting from a vehicle appears to be most effective on dark rainless nights. Lighting on foot is done to best advantage on rainy nights.

One-half of the traps on six trap-lines were not run for a 10-day period in mid-summer to test if tending influences the catchability of traps. Differences in numbers of woodcock captured per cell for 10-day periods before and after resting were measured on rested and non-rested halves. Preliminary analysis of variance show a significantly higher number of captures on rested portions of productive trap-lines. Results were inconclusive on poorer producing lines.

A collapsible portable trap, constructed of heavy gauge wire and one by one-inch netting was developed late in the summer. It was designed to be used for short periods in small covers, and to sample management areas not having permanent trap-lines. It has not been sufficiently tested to assess its efficiency.

One interesting return was a female woodcock, 743-61330, banded as a hatch-year bird in 1964. It had been re-captured twice before, once again in 1964 and once in 1965. An eight-year-old bird is the oldest we have on record.

Several weeks were spent revising the study outline for this project. Two meetings were held with Maine Department of Inland Fisheries and Game biologists, University of Maine biologists, and Bureau personnel to assess the project's value and to make recommendations for future emphasis. The new study outline stresses evaluation of management practices and de-emphasizes banding.

B. Ecology of Ruffed Grouse in Maine

This cooperative study with the University of Maine is carried out in conjunction with woodcock trapping. Our effort this summer was limited to banding sixty-seven ruffed grouse and ten spruce grouse, as Dr. Schennitz, the project leader, was away on sabbatical leave.

A paper on blood parasites of Mooschoom woodcock and grouse is at press.

C. Waterfowl Banding

Several live traps were used on the Daring Unit for waterfowl banding. Trapping was conducted by the summer students with assistance from VCC enrolees.

A total of 108 birds were banded; 4 Canada geese, 3 ring-necked ducks, 19 wood ducks, and 82 black ducks. This is more than three times the number of birds banded in 1971.

VI - PUBLIC RELATIONS

A. Recreational Use

Refuge visits for the year totaled 35,652 which differs little from last year's figure of 35,758.

Auto Tour use increased by 8%, while visits to our foot trails was down 37% over last year.

Fishing pressure varied little, but remained low because no trout were stocked in refuge streams.

The Visitor Center opened on June 19 and closed after the Labor Day weekend. Visits to the center increased by 35%.

Snowmobiling was allowed on the Baring Unit and in December the Edmunds Unit was opened to snowmobiling in cooperation with the State of Maine Parks and Recreation Commission. Use during December increased slightly, but the visits for the year decreased by 38%.

B. Refuge Visitors

Among our refuge visitors the following are listed:

Regional Office Personnel - Howard Woon
Eugene Hester
Peter Suich
Ed Yaw
Vendell Ogden
Dennis Stone

Central Office Personnel - Mr. & Mrs. Philip DeLongchamps
Mr. & Mrs. Samuel Benjamin

University of Maine - Dr. Owens
Howard Wendall
Malcolm Coulter
Bill Krohn

U.S. Game Management Agent - Bill Snow

Petuxent Research Center - Eldon Clark

C. Refuge Participation

Refuge personnel conducted tours, presented talks, or showed wild-life movies to approximately 40 civic and school groups totaling 1,300 visitors. Off-site programs were also presented upon request.

A Boy Scout Winter-camp was held near Refuge Headquarters on February 19, with 60 Scouts in attendance.

Refuge Manager Wade is Washington County District Chairman of the Boy Scouts and served as staff director at the International Camporee at Oak Bay, New Brunswick.

On May 6 the local unit of the Maine Army National Guard held a training session on the refuge. Small arms practice was conducted at Young's Gravel Pit, an additional YCC tent platform was constructed, and gravel hauled on the YCC camp entrance road.

A deer weighing station was set up at Refuge Headquarters in cooperation with the Calais Junior Chamber of Commerce "Big Buck" contest.

On May 28 a field trial was held on the refuge with 40 retrievers and 55 people participating.

D. Hunting

The refuge was closed to deer hunting in cooperation with the State of Maine.

E. Violations

A doe deer and two lambs were found shot at Magalloway during the first morning of the State season. We didn't catch the culprits, though this area was patrolled at half hour intervals. The meat was turned over to the State Fish and Game Department.

The State apprehended two deer jackers on the Edmunds Unit. They paid the mandatory \$200 fine.

F. Safety

Refuge Manager Wade was elected President of the Maine Federal Safety Council on November 17.

Refuge Manager Wade and Biological Technician McConvey presented a National Driving Course at Refuge Headquarters. Members of the refuge staff and four local residents completed the course.

Maintenance Worker Alton Sawyer suffered a fractured vertebrae when a scaffold collapsed from which he and three YCC enrollees were working. Although Mr. Sawyer's condition is improving, he has been unable to return to duty.

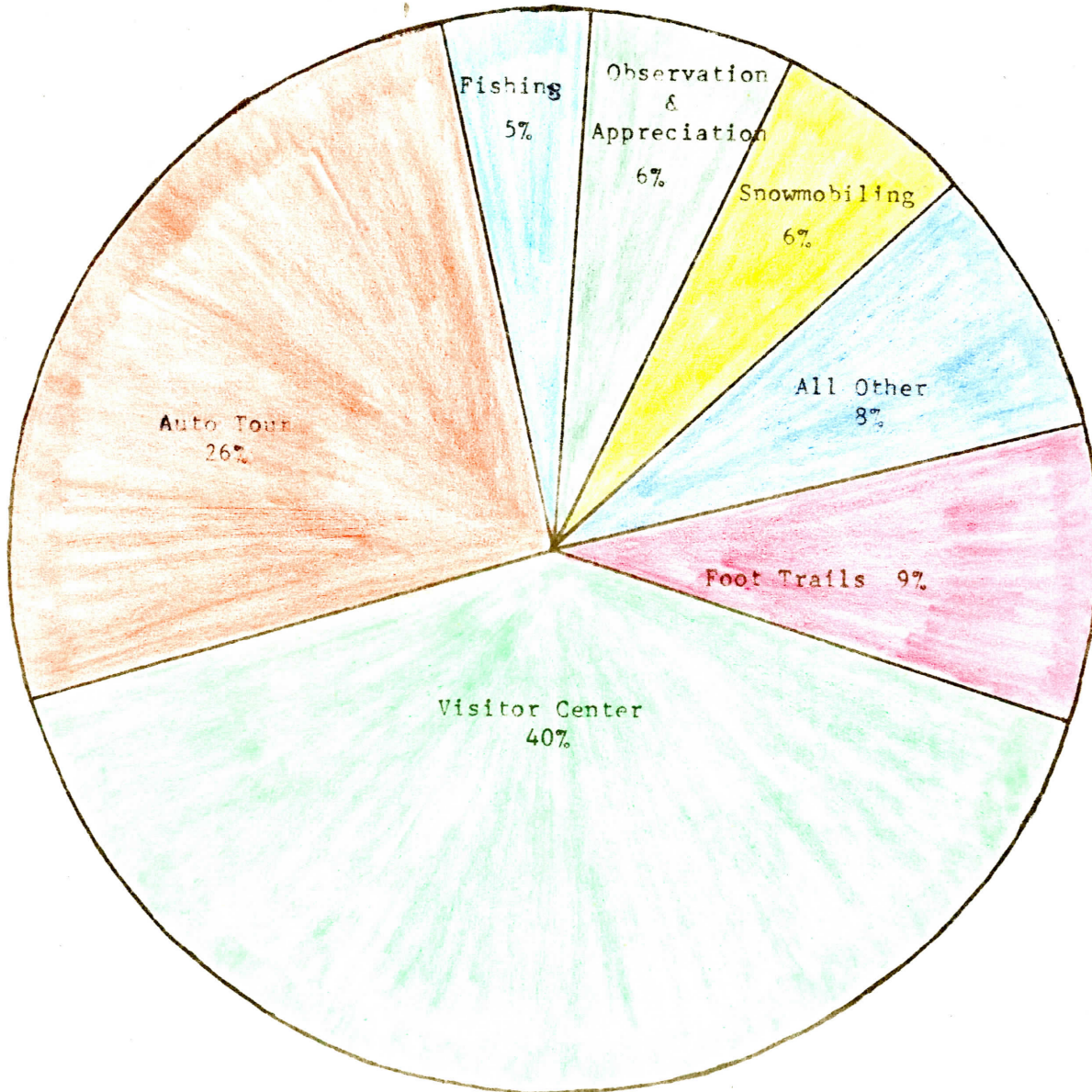
Safety Officer John Jones from Washington, D.C. and Don Culbertson from the Regional Office visited the refuge from August 3 to 5.

Enrollees at our YCC camp suffered six minor accidents during the summer.

PUBLIC USE 1972

MOOSEHORN NWR

Visits



VII - OTHER ITEMS

A. Items of Interest

A very successful Youth Conservation Corps camp was held for the eight week period June 26 to August 18. It was a 5-day, residential, co-ed camp with enrollees from Calais, Woodland, and Bangor, Maine.

Open House at the YCC camp was held on July 30 with approximately 150 guests. The enrollees presented a program of singing, Indian dancing, exhibits of refuge operations, wildlife and wildflower drawings, slide shows, and conducted tours of the wildlife trails and Auto Tour. A delicious lunch was served by the enrollees and everyone had an enjoyable time.

The Maine Army National Guard assisted refuge personnel by constructing one additional tent platform and hauling gravel for the YCC entrance road and platform site.

Assistant Refuge Manager Joe Ware attended the Woodcock Wingbee at Patuxent on February 7-11.

Messrs. Wade, Ware, and Nidecker attended the Program Schedule Workshop in Boston on October 10-13.

Assistant Refuge Manager Nidecker attended the Introduction to Supervision course in Boston on December 11-13.

Will Nidecker received a promotion to GS-7 on June 25.

Mr. Wade attended a YCC meeting in Washington, D.C. on March 13-16.

Two meetings were hosted by Mr. Wade for Operation REACH, a Boy Scout drug prevention program, at the Visitor Center in March and April.

The disappearance of a 16-year-old Indian boy, after an automobile accident, initiated an intensive search of the refuge by approximately 75 members of enforcement organizations and volunteers. The missing youth had been a member of the Moosehorn YCC camp for the last two summers. He was later located somewhere in the State of New Jersey.

Teachers and students from the Washington County Vocational Technical Institute conducted clear-cutting operations in conjunction with their forestry course.

Seal Island National Wildlife Refuge was acquired from the Navy, through GSA, on July 24, 1972. This 65 acre island, about 25 miles off the coast of Maine in Knox County, was a former bombing range. A wide variety and good number of pelagic birds of the east coast are represented on Seal Island.

Following is a list of temporary employees.

Name & Address	EOD	Termination	Title
Richard Cole, Dover, Delaware	07-01	08-30-72	Biological Aid
Kenneth Deardorff, Orono, Me.	07-02	09-15-72	Biological Aid
Michael Textoris, Parma, Ohio	07-03	07-04-72	Biological Aid
George Seel, Ramsey, N. J.	07-28	09-08-72	Biological Aid

The following youths worked at the refuge under the Neighborhood Youth Corps program for 26 hours per week for eight weeks during the summer.

Larry McKeown, Calais, Maine

Philip Farley, " "

Hazen McVicker, " "

Eric Kidder, Woodland, Maine

Four University of Maine wildlife students were hired under contract with the University for our woodcock banding program.

Michael Lambert	06-12	07-08-72
Bradley Day	06-12	08-08-72
Peter Arnold	06-12	07-08-72
George Jones	06-12	08-25-72

B. Photographs

A small selection of refuge photographs is appended.

Reviewed by:

Submitted by:

Signature

Robert V. Welch
Signature

5/1/73
Date

Op
NR-1B
Nov. 1957)

UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE

WATERFOWL UTILIZATION OF REFUGE HABITAT

Location HOSEBORN For 12-month period ending August 31, 19 72

Reported by A. W. Nidecker Title Asst. Refuge Manager

(1) Refuge Unit Location	(2) Habitat Type Acreage	(3) Use-days	(4) Breeding Population	(5) Production
I Hoseborn Marsh	Crops	Ducks 76,201	32	76
	Upland 1,549	Geese 6,042	2	3
	Marsh 326	Swans		
	Water 31	Coots		
	Total 1,906	Total 82,243	34	79
II Hoseborn Marsh	Crops	Ducks 26,323	26	62
	Upland 839	Geese 6,814	4	4
	Marsh 104	Swans		
	Water 71	Coots		
	Total 1,064	Total 33,137	30	66
III Hoseborn Marsh	Crops	Ducks 7,892	12	31
	Upland 670	Geese 1,258		
	Marsh 51	Swans		
	Water 13	Coots		
	Total 736	Total 9,150	12	31
IV Hoseborn Marsh	Crops	Ducks 39,484	42	99
	Upland 836	Geese 2,024		
	Marsh 166	Swans		
	Water 22	Coots		
	Total 1,034	Total 41,508	42	99
V Hoseborn Marsh	Crops	Ducks 6,598	4	12
	Upland 874	Geese 283	2	6
	Marsh 20	Swans		
	Water 16	Coots		
	Total 919	Total 7,181	6	18
VI Hoseborn Marsh	Crops	Ducks 7,897	8	18
	Upland 1,506	Geese 874	2	3
	Marsh 72	Swans		
	Water 10	Coots		
	Total 1,648	Total 8,771	10	21
VII Hoseborn Marsh	Crops	Ducks 21,058	24	55
	Upland 1,603	Geese 874	2	4
	Marsh 102	Swans		
	Water 42	Coot		
	Total 1,800	Total 21,932	26	59

Ob
NR-1B
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UNITED STATES
DEPARTMENT OF THE INTERIOR
FISH AND WILDLIFE SERVICE
BUREAU OF SPORT FISHERIES AND WILDLIFE

WATERFOWL UTILIZATION OF REFUGE HABITAT

MOOSEHORN For 12-month period ending August 31, 1972

by A. W. Nisacker Title Assistant Refuge Manager

(1) Refuge Unit Location	(2) Habitat Type Acreage	(3) Use-days	(4) Breeding Population	(5) Production
VIII Brook	Crops	Ducks 4,579	12	30
	Upland	Geese 874	4	5
	Marsh	Swans		
	Water	Coots		
	Total	Total 5,453	16	35
IX low	Crops	Ducks 1,316	2	6
	Upland	Geese		
	Marsh	Swans		
	Water	Coots		
	Total	Total 1,316	2	6
X Lake	Crops	Ducks 2,948	12	30
	Upland	Geese		
	Marsh	Swans		
	Water	Coots		
	Total	Total 2,948		30
XI Lake	Crops	Ducks 7,905	24	55
	Upland	Geese 874		
	Marsh	Swans		
	Water	Coots		
	Total	Total 8,779	24	55
XII Pond	Crops	Ducks 2,632	2	6
	Upland	Geese		
	Marsh	Swans		
	Water	Coots		
	Total	Total 2,632	2	6
XIII Bog	Crops	Ducks 7,153	8	18
	Upland	Geese		
	Marsh	Swans		
	Water	Coots		
	Total	Total 7,153	8	18
XIV Stream	Crops	Ducks 2,635	10	25
	Upland	Geese		
	Marsh	Swans		
	Water	Coot		
	Total	Total 2,635	10	25

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WATERFOWL UTILIZATION OF REFUGE HABITAT

Re MOOSEHORN For 12-month period ending August 31, 19 72

ated by A. W. Nidecker Title Assistant Refuge Manager

(1) or Unit nation	(2) Habitat Type Acreage	(3) Use-days	(4) Breeding Population	(5) Production
XV Smith	Crops	Ducks 26,955	22	50
	Upland 120	Geese		
	Marsh 9	Swans		
	Water 12	Coots		
	Total 141	Total 26,955	22	50
XVI ley Cove	Crops	Ducks 23,971	8	18
	Upland 510	Geese		
	Marsh 2	Swans		
	Water 1	Coots		
	Total 513	Total 23,971	8	18
XVII t/Broad s	Crops	Ducks 5,265	4	12
	Upland 2,244	Geese		
	Marsh 2	Swans		
	Water 132	Coots		
	Total 2,378	Total 5,265	4	12
XVIII e Mill	Crops	Ducks 2,635	4	12
	Upland 908	Geese		
	Marsh 42	Swans		
	Water 7	Coots		
	Total 957	Total 2,635	4	12
	Crops	Ducks		
	Upland	Geese		
	Marsh	Swans		
	Water	Coots		
	Total	Total		
l for uge	Crops	Ducks 273,447	256	615
	Upland 20,931	Geese 20,217	10	23
	Marsh 1,420	Swans		
	Water 853	Coots		
	* Total 22,684	Total 293,864	272	640
	Crops	Ducks		
	Upland	Geese		
	Marsh	Swans		
	Water	Coot		
	Total	Total		

cludes 218 acres to low watermark on the Edmunds Unit.

REPORT OF BANDING ON HOOSEHORN REFUGE - CALENDAR YEAR 1972

Geese	Method of Trapping*	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Totals
Canada	cage								4					4
Brant														
Ducks														
Mallard														
Black	cage							1	64	17				82
Gr.-Winged Teal														
Bl.-Winged Teal														
Wood Duck	cage							1	16	2				19
Ring-necked Duck	cage								2	1				3
Eider														
Total Waterfowl								2	86	20				108
Other														
Mourning Dove														
Woodcock	cage						27	84	25	4				140
Landcock	mist						26	110	39	7				182
Landcock	night-lite						21	39	29	9				98
Total Woodcock:							74	233	93	20				420
uffed Grouse	cage						1	50	26					77
Quotas: Canada geese _____; Mallard _____; Blacks _____; Other Woodcock - as many as possible														

*Method of Trapping: CAN - Cannon Net; CAGE - Cage; MIST - Mist Net; NITE - Night-lighting
Includes 10 Spruce Grouse (6 in July and 4 in August)

15-00000

Fallow Ag. Land.

Grazing Operations 3

Service Operation

DIRECTIONS FOR PREPARING FORM NR-8
CULTIVATED CROPS - HAYING - GRAZING

Report Form NR-8 should be prepared on a calendar-year basis for all crops which were planted during the calendar year and for haying and grazing operations carried on during the same period.

Separate reports shall be furnished for Refuge lands in each county when a refuge is located in more than one county or state.

Cultivated Crops Grown - List all crops planted, grown and harvested on the refuge during the reporting period regardless of purpose. Crops in kind which have been planted by more than one permittee or this Service shall be combined for reporting purposes.

Permittee's Share - Only the number of acres utilized by the permittee for his own benefit should be shown under the Acres column, and only the number of bushels of farm crops harvested by the permittee for himself should be shown under the Bushels Harvested column. Report all crops harvested in bushels or fractions thereof except such crops as silage, watermelons, cotton, tobacco, and hay, which should be reported in tons or fractions thereof.

Government's Share or Return - Harvested - Show the acreage and number of bushels harvested for the Government of crops produced by permittees or refuge personnel. Unharvested - Show the exact acreage and the estimated number of bushels of grain available for wildlife. If grazing is made available to waterfowl through the planting of grain, cover, green manure, grazing or hay crops, estimate the tonnage of green food produced or utilized and report under Bushels Unharvested column.

Total Acreage Planted - Report all acreage planted, including crop failures.

Green Manure, Cover and Waterfowl Grazing Crops - Specify the acreage, kind and purpose of the crop. These crops and the acreage may be duplicated under cultivated crops if planted during the year, or a duplication may occur under hay if the crop results from a perennial planting.

Hay - Improved - List separately the kinds of improved hay grown. Annual plantings should also be reported under Cultivated Crops, and perennial hay should be listed in the same manner at time of planting.

Total Refuge Acreage Under Cultivation - Report total land area devoted to agricultural purposes during the year.

Permittee	Permit No.	Unit or Location	Acreage	No. of Units Expressed in B. F., ties, etc.	Rate of Charge	Total Income	Reservations and/or Diameter Limits	Species Cut
Roger Featherston	72-1	VI-B	1	6.66 cd.	3.00	20.00		birch, maple
Harvey Frail	72-9	VI	3	3.33 "	3.00	10.00		"
Harvey Small	72-11	IXA, V, VI, VIII	4	1,000 lb.	.01	10.00		fir tips
Horace Small	72-12	IXA, V, VI, VIII	4	1,000 "	.01	10.00		"
Elmer Stevens	72-13	IXI, V, VI, VIII	4	1,000 "	.01	10.00		"
Winfield Murray	72-14	IXI, V, VI, VIII	4	1,000 "	.01	10.00		"
Phillip Owen	72-15	VI	5	13 1/3 bbls.	.75	10.00		Xmas trees
Mrs. Grant Ross	72-16	IXI, V, VI, VIII	4	1,000 lb.	.01	10.00		fir tips
Guy Cook	72-17	IXI, V, VI, VIII	4	1,000 "	.01	10.00		"
Wallace Small	72-18	IXI, V, VI, VIII	4	1,000 "	.01	10.00		"
Arthur McLaughlin	72-19	IXI, V, VI, VIII	4	1,000 "	.01	10.00		"
Bright Lingley	72-20	IXI-B	3	3 cd.	3.00	15.00		birch, maple
Lance Gatenb	72-21	IXI, V, VI, VIII	4	1,000 lb.	.01	10.00		fir tips
Norman Day	72-22	IXI-B	4	1,000 "	.01	10.00		"
Edgar Quinn	72-23	IX	15	66 bbls.	.75	64.50		Xmas trees
Clifton Lank	72-24	IXI, V, VI, VIII	4	1,000 lb.	.01	10.00		fir tips
Storm Isbolland	72-25	IXI, V, VI, VIII	4	1,000 "	.01	10.00		"
Frank Preston, Jr.	72-26	IXI, V, VI, VIII	4	1,000 "	.01	10.00		"
Roger Featherston	72-27	IXI, V, VI, VIII	4	1,000 "	.01	10.00		"
Roger Featherston	72-28	VII-B	3	6.66 cd.	3.00	20.00		birch, maple
Herbert Bishop	72-29	XI-B	5	13 1/3 bbls.	.75	10.00		Xmas trees
	70-16	XI-B	8	10,000 bd. ft.	15/100	150.00		pine seedlings
Herbert Bishop	70-16	XI-B	10	61.52 cd.	5.00	307.60		fir, spruce

Total acreage cut over 62

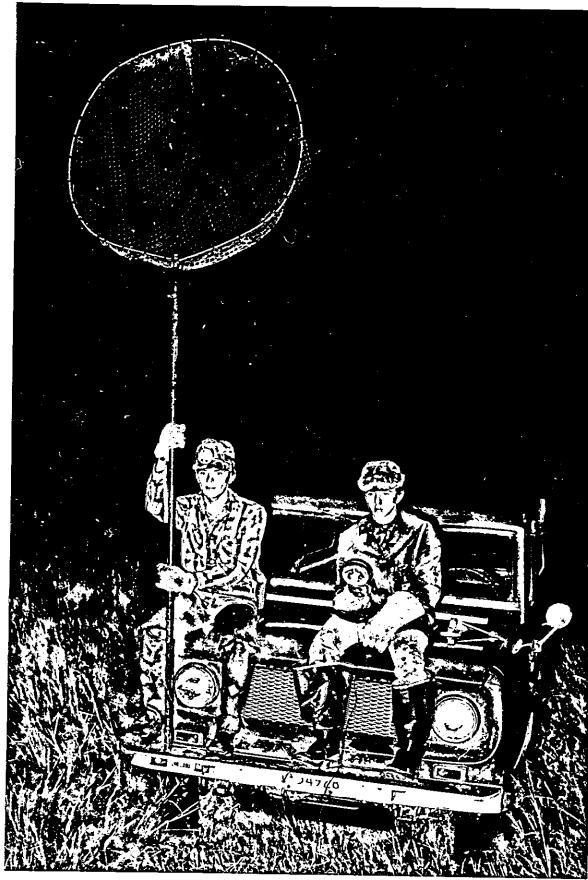
Total income \$747.10

No. of units removed B. F. 10,000

Method of slash disposal

Cords 81.21
 Pounds 14,480
 Bundles 112 2/3

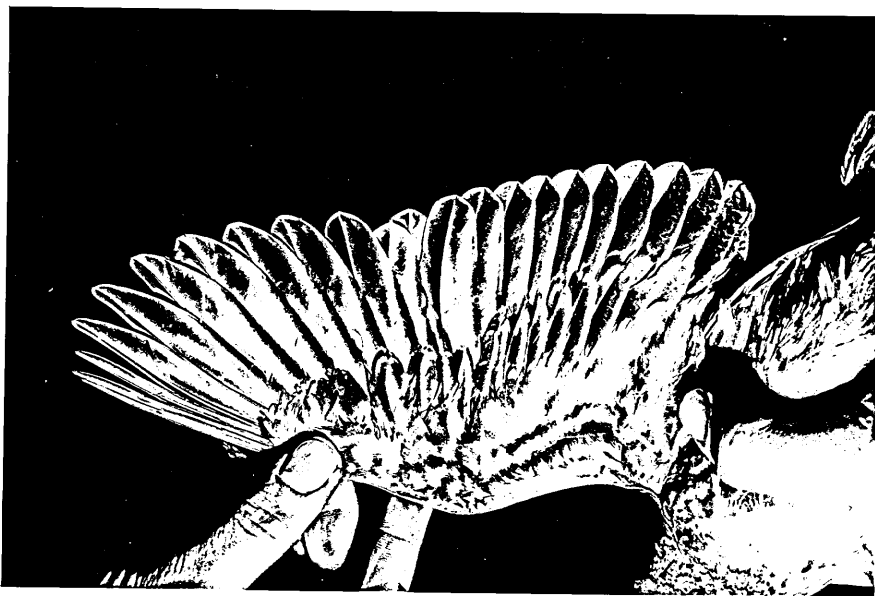
NR-11 Timber Removal 5RF-1/69
 includes money received in 1972 for permit issued in 1970



Woodcock night-lighting equipment. Used on mowed strips in grassy fields, especially on dark rainy nights.



Gotcha!



It's identified as an immature, female woodcock



Then she's entitled to her individual band



Larvae of the alder beetle go to work.



They destroy more woodcock habitat than any other insect. By allowing too much sunlight through the alders, we get a rank, dense growth of grasses and herbs.